

City of San Diego

San Diego County

Site Description

The City of San Diego's granted public trust lands include more than 4,000 acres of land and water, 27 miles of shoreline, and eight official swimming areas. Climate change is expected to increase the risk of flooding and erosion on these lands, with potential impacts to City and non-City assets and resources.

This report identifies these risks, presents an inventory of vulnerable resources and facilities, and outlines potential adaptation strategies to address these vulnerabilities.

Climate models project that sea level in the San Diego region will rise faster over the course of this century than it did during the previous 100 years, increasing the potential for flooding and erosion along the coastline. Such potential impacts will be greatest during coastal storms, when storm surge occurs alongside higher sea levels.

Because granted lands lie along the coast, the greatest risks posed by climate change to these lands are related to sea level rise and storm surge. Sea level in the San Diego region is expected to rise 5 to 14 times faster over the course of this century than it did in the previous century, leading to risks of increased flooding.

Coastal Hazards considered:
100-year storm, shoreline erosion/cliff retreat



Granted Land Type:
Smaller Harbor/Marina
with Recreational
Amenities or Natural
Assets

Public Trust Uses

Primary Uses: Commerce,
Navigation

Secondary Uses: Environmental
Stewardship, Fisheries, Recreation



Modeling system used for mapping:
CoSMoS

Sea level rise scenarios/elevations
[LINK TO FULL ASSESSMENT](#)

Vulnerable Public Trust Resources	
Built Facilities	Lifeguard stations (32), water pipes (226 segments), wastewater pipes (436 segments), wastewater pumps (23), bridges (6), major arterials (24 segments), stormwater drain pump stations (2), stormwater outfalls (96), recreation centers (2)
Natural Assets	Elk Parks (1,089 acres), conservation areas (2), bog and marsh habitat (2 acres), historic/cultural resources (6)

Other Economic Vulnerabilities

Adaptation costs were measured qualitatively using a “Low/Medium/High” ranking system for each individual adaptation option. For example, building marshes to serve as buffers against sea level rise was rated “High,” indicating a cost greater than \$100 million, whereas considering sea level projections when determining the length of long-term leases was rated “Low,” indicating a cost less than \$4 million. Losses in non-market value were provided only for year 2100 and no current costs were provided.

Proposed Adaptation and Mitigation Measures

Protect

Screen planned infrastructure for climate risks. Require new facilities in flood hazard zones to be raised above the existing base elevation plus projected sea level rise over the life of the infrastructure. Require changes in infrastructure design and materials to increase waterproofing. Implement flood-proofing measures on building and infrastructure when conducting routine maintenance.

Accommodate

Build marshes to serve as buffers against sea level rise. Make public places resilient to sea level rise (waterproof, movable, elevated facilities). Restore coastal dunes and habitat. Identify buildings requiring redundant power sources and purchase backup sources. Consider sea level rise projections when determining the length of long-term leases.

Retreat

Create habitat/open space. Convert parking lots to restore open space. Convert leaseholds to mitigation areas. Develop a long-term managed retreat plan, including triggers for relocation or removal of structures.

Partnerships:

The City has developed partnerships to respond to climate change with California Office of Emergency Services, U.S. Department of Defense, FEMA Region IX, Caltrans HQ, Caltrans District 11, Port of San Diego, San Diego Metropolitan Transit System, Scripps Institute of Oceanography, California Health and Human Services Agency, Community Action Partnership, County of San Diego, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, Coastal Conservancy, Circulate San Diego, Clean Tech San Diego, San Diego Bike Coalition, Environmental Health Coalition, San Diego Association of Governments, University of California San Diego, San Diego Chamber of Commerce, San Diego Gas and Electric, San Diego Audubon, El Dorado Properties, and San Diego Airport.

Anticipated Costs of Sea Level Rise (millions)*

	Current	2030 (9.6 in.)	2050 (19.2 in.)	2100 (39–79 in.)
Assets at Risk or Repair and Replacement Costs		\$400–\$530	\$530–\$700	\$700–\$1,223
Losses in Non-Market Value				\$21–\$34

* Assets at Risk added up from Table 5, pp. 30-31; Non-Market Value Losses added up from Table 6, p 32.